Glottalization at phrase boundaries in Tuscan and Roman Italian: Evidence from laboratory and semi-spontaneous speech

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Phonological accounts of Italian traditionally exclude glottal consonants from the sound inventory of the language (Krämer 2009). However, Vayra (1994) questioned this in a study of short vowels in word-final stressed syllables. Here speakers produced creak, commonly taken to be a concomitant of glottal stop (see Ladefoged & Maddieson 1996). Vayra analyzed this creak as a glottal consonant filling an empty “C-segment” coda in final stressed syllables. Despite the innovation of Vayra’s analysis, the study has never been systematically followed up. Nonetheless, a number of more recent studies of Italian have noted that glottalization (here intended as creak, glottal stop or breathiness) often occurs in word-final stressed open syllables, generally before a phrase boundary or a pause (see van Santen & D’Imperio 1999, Stevens et al. 2002 and Stevens & Hajek 2006). In the present study the two possible sources of glottalization posited to date (word-level and phrase-level) are investigated separately.

In part I of this study, acoustic and laryngographic recordings were made of two native speakers of central Italian (one Tuscan, one Roman) who produced three sets of near-minimal pairs for stress (e.g. meta-meta ‘destination’-‘half’). The target words appeared both in carrier phrases (1), which were designed to elicit the placement of a prosodic boundary immediately following the target, and in meaningful sentences (2), where the target words were elicited phrase-internally. For example:

(1) Ho detto la parola meta/meta di nuovo. ‘I said the word half/destination again.’

(2) Ho dato meta del mio panino a Gianni. ‘I gave half of my sandwich to Gianni.’

Austin è la meta di chi ama sentire musica dal vivo. ‘Austin is the destination for those who love listening to live music.’

Glottalized segments were subsequently identified by examining the waveform produced by the laryngograph for irregular glottal cycles, as compared to the regular cycles of vibration in modal voice (see Marasek 1997). Support for labeling was sought in the acoustic signal as well, following work by Dilley et al. (1996) and Gordon & Ladefoged (2001).

Creaky voice was the most frequent form of glottalization found. Results show no main effect of word stress on the glottalization of vowels in word-final open syllables. This result is in line with what has been suggested by Stevens et al. (2002), that is, that glottalization is not exclusively associated with final stress. However, results do suggest a main effect of a following phrasal boundary on glottalization in this context. This was independent of stress. Evidence was also found, particularly in the Tuscan speaker, for phrase-initial glottalization (noted also in passing by Kohler 2000 for Italian). These results confirm that it is the presence of a phrase boundary which correlates with glottalization, not word stress. Cross-linguistically, nonmodal phonation (in particular creaky voice) is commonly used to mark prosodic boundaries, either initially and/or finally (Gordon & Ladefoged 2001). This sort of allophonic glottalization has been documented, for example, in English (Pierrehumbert 1995, Dilley et al. 1996, Redi & Shattuck-Hufnagel 2001), German (Kohler 1994) and French (Fougeron 2001).

In part II of this study, the findings from analysis of laboratory speech are confirmed with evidence from semi-spontaneous speech in Map Task dialogues recorded in Rome and Florence from the CLIPS corpus (http://www.clips.unina.it/it/index.jsp). Data from four speakers of each variety were analyzed. Glottalization, again predominantly in the form of creaky voice, is found in both phrase-initial and phrase-final vowels, as well as utterance-finally, strongly suggesting that glottalization may be used to delimit phrases in Roman and Tuscan Italian.

To sum up, the results put forward in both parts of the present study suggest that glottalization is present in central Italian, and furthermore that it is conditioned by the presence of phrase boundaries.
References

Corpora e Lessici dell’Italiano Parlato e Scritto (CLIPS): http://www.clips.unina.it/it/index.jsp.


